Syllabus and Course Policies
PHYS 116: Seminar in Physics & Astronomy at Rice and Beyond

Course Instructor: Jason Ling
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Herman Brown Hall, room 344
Office Hours: Tues 2:30 - 3:45 pm

Course Organizer: Dr. Lam Yu
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Course Description:

A half-semester seminar course designed for science-major undergraduates to become familiar with the process of reading, discussing, and comprehending published research articles. It is intended for students who are strongly considering pursuing a career involving scientific research.

Course Objectives:

This course is unconventional by typical physics classes standards. Ultimately, the exact content of the readings is less important than the process through which we will be analyzing them. We are hoping to impart some of the basic skills in preparing students to become independent researchers, something that is crucial for future stages of a scientific career. Reading, comprehending, and in general becoming more familiar with scientific research in a more relaxed, yet structured manner is the main goal of this course.

Course Schedule

Regular Meetings:

Thursdays 3:00PM - 4:40PM
BRK 103 (once in-person classes resume)
See the PHYS116 Canvas page for the Zoom link

Homeworks:

6 assignments due midnight the night before the next class meeting

Date	Meeting Summary	Notes	Assignment Due
1/28/21	Introduction, overview	Regular class meeting	
2/04/20	Article 1 abstract/intro	Regular class meeting	HW #1
2/11/20	Article 1 methods	Regular class meeting	HW #2
2/18/20	Article 1 results/discussion	Regular class meeting	HW #3
2/25/20	Article 2	Regular class meeting	HW #4
3/04/20	Lab tour	Tour of a physics laboratory at Rice	HW #5
3/11/20	Conference exercise, wrap-up	Discuss and practice the logistics of presenting at a scientific conference	HW #6
Self-scheduled (Zoom)	Seminar or Colloquium	Attend a department seminar or colloquium: Physics seminar and Colloquium Schedule	
By end of the semester			End of course survey

Readings:

1) Zhou, P., Chen, L., Liu, Y. *et al.* Electron pairing in the pseudogap state revealed by shot noise in copper oxide junctions. *Nature* 572, 493–496 (2019).

2)Pérez, L. M., Carpenter, J. M., Andrews, S. M., *et al.* Spiral density waves in a young protoplanetary disk. *Science.* 353, 1519–1521 (2016).

Course Policies

Attendance and Grading:

Attendance is mandatory. Since this is a seminar course with only a few meetings during the semester, it is not possible to truly make up a missed class. Should you miss a meeting due to an illness or emergency, you may request an opportunity to recover some of the points by completing an additional reading and homework.

Being late to class meetings will negatively impact your participation grade for that session. Your final grade will be based on written homework assignments (6 assignments) and class participation (7 meetings/tour).

This course is meant to introduce undergraduates to physics research and scientists in a non-threatening environment. Effort is more important than right or wrong answers. Students who attend all class meetings, actively contribute to discussions, and put a solid effort into every homework assignment will be able to earn an A. However, this will not be an easy A — the homework can be time-consuming and the readings are difficult. Nevertheless, students who attempt to thoughtfully answer each question or explain where they became lost or confused will do best.

Electronic Devices:

No phones, computers, or tablets during class unless there is an emergency or specifically permitted by their instructor. In the interest of a lively discussion, is important that students not be distracted by texting, gaming, or surfing the web. Hand-written notes are encouraged instead.

Disability Accommodations:

Any student with a documented disability needing academic adjustments or accommodations are requested to speak with the instructors during the first week of class. All discussions will remain confidential. Students with disabilities also will need to contact Disability Support Services in the Allen Center.

Honor Code:

All homework must be the work of the individual. You are not permitted to work with others on any of the homework assignments unless specifically stated on the assignment itself. In such a situation, you should list the names of all those with whom you worked.

Cite your sources on homework assignments. When referencing the assigned readings, it is sufficient to reference the articles as “1stAuthor’sLastName, et al.” When consulting outside sources, you must provide a complete reference (i.e. authors, journal name, year, volume and page number), or a URL if the source is not from a published journal. Any text quoted verbatim from a source must be placed in quotes. Please review the Rice Honor Council policy on plagiarism at http://honor.rice.edu/honor-system-handbook/

Conduct:

Please be respectful of all students, instructors, and laboratory staff you will encounter during this course, whether it be their opinions or persons. Being tactful and having some social awareness are invaluable skills that career scientists ought to have.

Diversity and Inclusion:

Historically, people of color, women, and other groups have been underrepresented in physics and astronomy. This lack of diversity has likely led to missed opportunities for exploration and discovery. While the field is now more inclusive, it is important to understand

that our history impacts the current state of our field. The questions that we choose to ask in science are influenced by who is included in the scientific endeavor.

We all bring different experiences to this class. As participants in this class, all instructors and students should strive to honor the diversity of the class. In this class, you have a right to define your identity, but no student is ever presumed to speak on behalf of any group or anyone other than themselves. You have the right to be called by your pronouns and the name you wish. If there are aspects of this course that act as barriers to your inclusion in course content, please contact one of the instructors privately.

Canvas:

Homeworks and announcements will be released through the course's Canvas website. The forum section of the website may also be used, based on popular demand. Link to the site: https://canvas.rice.edu/courses/39785